What is claimed is:

1.   A method of locating a mobile station in a telecommunications network having at least a first network operator having a plurality of first base stations and a second network operator having a plurality of second base stations, said method using measurement information related to arrival of signals transmitted from the first and second base stations to the mobile station for obtaining the location thereof based on observed time difference, said method comprising the steps of :

acquiring (120) the measurement information of at least one second base station and the measurement information of one or more first base stations when the measurement information of the first base stations alone is insufficient for location calculation; and

calculating (118) the location of the mobile station based on the acquired measurement information.

2.   The method of claim 1, wherein the measurement information includes time-reference information for obtaining real-time difference (RTD) in the arrival of the transmitted signals, and the time-reference information is provided by at least one location measurement unit (LMU).

3.   The method of claim 1, wherein the measurement information includes geometric time-difference (GTD) between the arrival time of signals transmitted from two of the first or second base stations.

4.   The method of claim 1, wherein the arrival of the transmitted signal is measured based on a broadcast common control channel (BCCH) frequency.

5.   The method of claim 1, wherein the arrival of transmitted signal is measured based on a broadcast common control channel (BCCH) frequency, which is automatically tracked by the LMU.

6.   The method of claim 1, wherein the location calculation is based on triangulation.

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7.   The method of claim 1, wherein the location calculation is based on a circular-type method.

8.   The method of claim 1, wherein the location calculation is based on a hyperbolic-type method.

9.   The method of claim 1, wherein the first network operator has at least one first serving mobile location center (SMLC) for providing assistance data of the first base stations, and the second operator has at least one second serving mobile location center for providing assistance data of the second base stations to the first serving mobile location center, allowing the first serving mobile location center to provide the assistance data of the first and second base stations to the mobile station, for the mobile station to acquire the measurement information based on the provided data.

10.   The method of claim 9, wherein the assistance data includes the identity and BCCH frequency of the first and second base stations.

11.   The method of claim 9, wherein the telecommunications network is a GSM network, and the assistance data is provided to the mobile station via a location services protocol (RRLP) over a radio resource management (RR) layer.

12.   The method of claim 9, wherein the telecommunications network is a UTRAN network, and the assistance data is provided to the mobile station over a radio resource control (RRC) layer.

13.   The method of claim 9, wherein the calculating step is carried out in the first serving mobile center.

14.   The method of claim 9, wherein the assistance data further includes location information of the first and second base stations and the calculating step is carried out in the mobile station based on the location information.

15.   The method of claim 1, wherein the telecommunications network is a GSM network and the observed time difference is E-OTD.

16.   The method of claim 1, wherein the telecommunications network is a UTRAN network and the observed time difference is IPDL OTDOA.

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